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BUREAU OF SHIPS GROUP

TECHNICAL INSPECTION REPORT

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By Authority of Joint Chiefs of Staff Action of 12 April 1949

By John D. Galt Date 24 April 51

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6 OPERATION CROSSROADS.
U.S.S. BRISCOE (APA65)

TEST BAKER [U]

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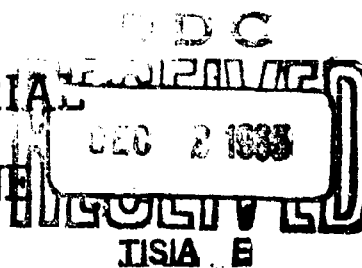
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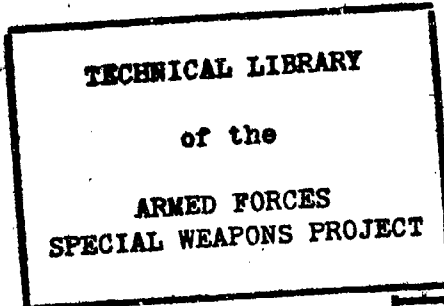
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TECHNICAL INSPECTION REPORT

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USS BRISCOE (APA65)

U.S.S. BRISCOE (APA 65)

SHIP CHARACTERISTICS

Building Yard: Consolidated Steel Corp.; Wilmington, California.

Commissioned: 29 October 1944.

HULL

Length Overall: 426 feet 0 feet.

Length on Waterline: 400 feet 0 inches.

Beam (extreme): 58 feet 0 inches.

Depth (molded to upper deck): 37 feet 0 inches.

Drafts at time of test: Fwd. 9 feet 9 inches.

Aft. 16 feet 4 inches.

Limiting displacement: 7,080 tons.

Displacement at time of test: 5,609 tons.

MAIN PROPULSION PLANT

Main Engines: Two sets of Westinghouse steam turbines, directly connected to Westinghouse main generators. Two main shaft motors.

Main Condensers: Two are installed in ship.

Boilers: Two Babcock and Wilcox boilers are installed in ship. 450 psi gauge - 750° F.

Propellers: Two are installed in ship.

Main Shafts: Two are installed in ship.

Ships Service Generators: Five are installed in ship.

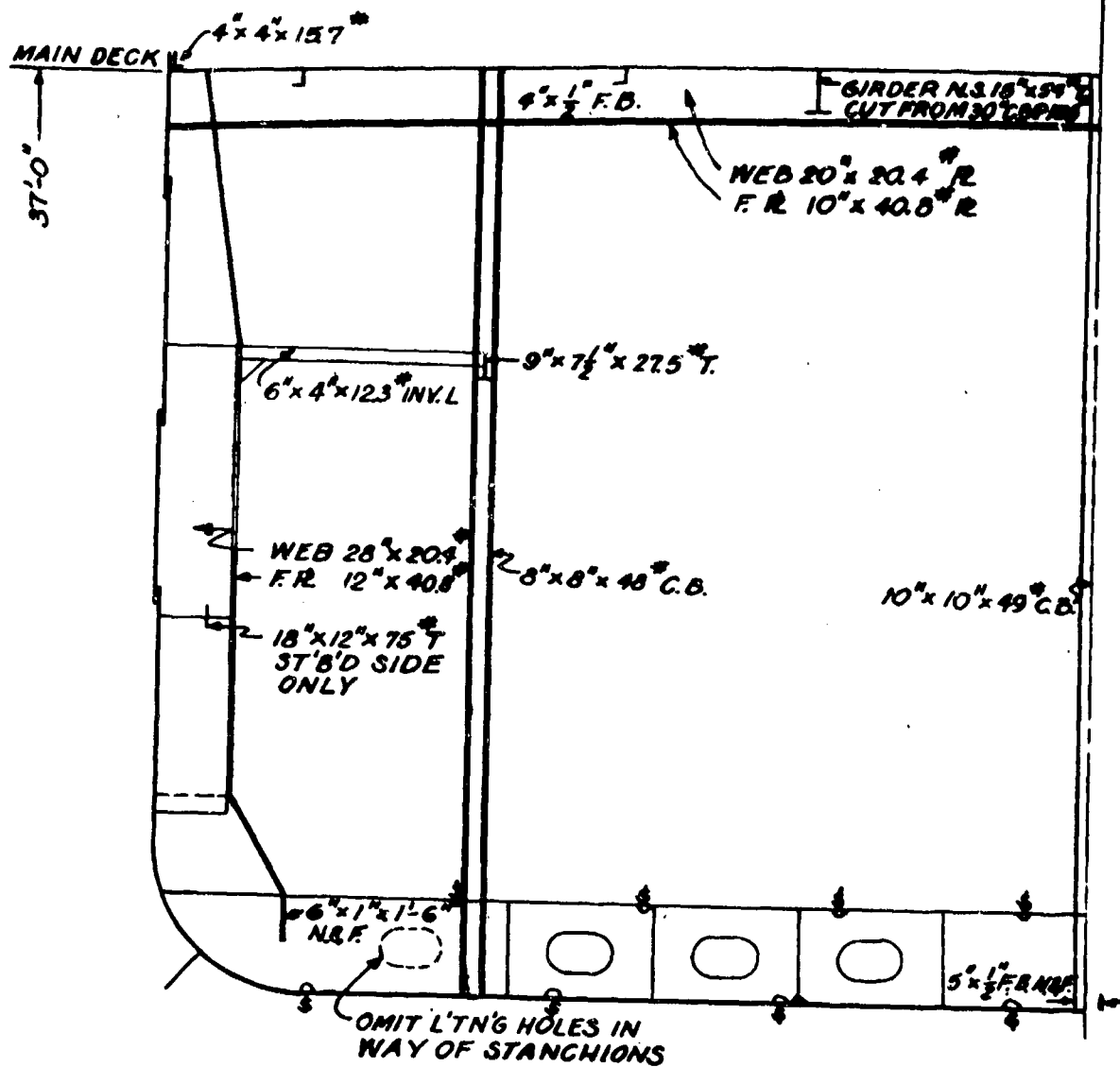
Two - 250 KW. - 450 V. A.C.

One - 150 KW. - 450 V. A.C.

Two - 100 KW. - 120/240 V. D.C.

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USS BRISCOE (APA65)



MIDSHIP **FRAME 76 LOOKING AFT** SECTION

TEST B

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USS. BRISCOE (APA65)

TECHNICAL INSPECTION REPORT

OVERALL SUMMARY

I. Target Condition After Test.

(a) Drafts after Test; general areas of flooding, sources.

There was no flooding, hence no change in drafts or list.

(b) Structural Damage.

HULL

In the superstructure, bulkheads are dished, both flag bags are missing, watertight and weathertight doors are dished. Some of the doors are jammed. The stacks are also dished. The upper deck cargo hatch boards are displaced. Many of the boards are creased at the mid length. The retaining straps for both port and starboard after cargo booms have been carried away.

MACHINERY

No comment.

ELECTRICAL

Not observed.

(c) Other Damage.

HULL

Not observed.

MACHINERY

Cracked paint around the foundations of the ship's service (AC) and auxiliary (DC) generator in the forward engine room indicates slight momentary displacement of these units. Three holding down bolts on the auxiliary condenser in the auxiliary machinery

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USS BRISCOE (APA65)

room sheared. Mounting bolts securing vertical reciprocating pumps were loosened on practically all of these pumps. On this vessel, almost all pumps are of this type. Brickwork of #2 boiler was slightly damaged. A cast aluminum link in the flexible coupling of the emergency diesel generator broke. There was some other minor damage.

NOTE: It was not practicable to test machinery or to open it for interior inspection. The only machinery on this vessel operated after Test B is the emergency diesel generator. It is considered probable that there are leaks in some of the auxiliary condensers and some other damage may exist.

ELECTRICAL

The only positive electrical damage included the gyro compass, portable storage batteries, and scattered lighting fixtures.

II. Forces Evidenced and Effects Noted.

(a) Heat.

HULL

None.

MACHINERY

No evidence.

ELECTRICAL

There was no evidence of heat.

(b) Fires and Explosions.

HULL

None.

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USS BRISCOE (APA65)

MACHINERY

No evidence.

ELECTRICAL

There were no fires or explosions.

(c) Shock.

HULL

The only evidence of damage that might possibly be attributed to shock, is the large number of broken electric light bulbs throughout the ship.

MACHINERY

The BRISCOE received a fairly heavy underwater shock which caused most of the damage listed above. There are also other evidences of shock such as galley range tops thrown around the broken, loose gear scattered around, etc.

ELECTRICAL

There were indications of shock in the engineering spaces, as evidenced by cracked paint and missing hold down bolts on heavy machinery in both engine rooms and auxiliary machinery spaces.

(d) Pressure.

HULL

There is little effect of pressure as such. Structural damage is believed to have been caused by shipping of green water due to a wave created by the blast. The ship's inclinometer indicates a roll to starboard in the general order of 60 degrees and a roll of approximately 55 degrees to port.

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USS BRISCOE (APA65)

MACHINERY

No evidence.

ELECTRICAL

No evidence of pressure was observed.

(e) Effects peculiar to the Atomic Bomb.

HULL

Effects peculiar to the atomic bomb are the downfall of water and a large wave of water.

MACHINERY

An underwater shock of this magnitude at such a distance from an explosion is apparently peculiar to the Atom Bomb.

ELECTRICAL

High radioactivity which persisted after the test was the only peculiar effect noted.

III. Effects of Damage.

(a) Effect on machinery, electrical, and ship control.

HULL

Not observed.

MACHINERY

Damage found by visual inspection had no appreciable effect on machinery or ship control. Breakage of the link in the flexible coupling of the emergency diesel generator did not impair operation as the generator was operated to furnish lighting current during the inspection. Additional damage such as condenser tube leaks may exist. Some additional damage might have occurred if the machinery had been operating. However, it is not believed that such additional damage would be sufficient to immobilize the ship or to seriously handicap her for more than a short time.

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USS BRISCOE (APA65)

ELECTRICAL

It is believed propulsion and ship control was not seriously affected.

(b) Effect on gunnery and fire control.

Not observed.

MACHINERY

No comment.

ELECTRICAL

Not affected by electrical failures.

(c) Effect on watertight integrity and stability.

HULL

None.

MACHINERY

No comment.

ELECTRICAL

Not affected.

(d) Effect on personnel and habitability.

HULL

Personnel would have been endangered by the equipment being dislodged and thrown about the ship due to the excessive rolling. Top side personnel would have had difficulty remaining in exposed position. Heavy rolling of the ship, coupled with the heavy downpour of water from the bomb, would have washed many of the personnel overboard. Habitability of the ship is adversely affected because of the radiological condition.

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USS BRISCOE (APA65)

MACHINERY

The ship had high radioactivity when inspected 16 days after Test B. This would have had little effect on personnel or habitability below decks.

ELECTRICAL

Personnel and habitability were not affected by any electrical failures.

(e) Effect on fighting efficiency.

HULL

The fighting efficiency of the vessel would probably have been adversely affected by injuries to personnel.

MACHINERY

Damage found by visual inspection would have had no effect on fighting efficiency. It is not believed that fighting efficiency would have been seriously affected mechanically if she had been underway during the test. The effect of radioactivity might have had a serious effect on fighting efficiency.

ELECTRICAL

None due to electrical failures.

IV. General Summary of Inspector's Impressions and Conclusions.

HULL

Structurally, this vessel could carry out its function but, other considerations such as personnel injuries would probably handicap its efficiency.

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USS BRISCOE (APA65)

MACHINERY

The BRISCOE appears to have been at approximately the limiting range of effectiveness of this type of attack against vessels of her class.

ELECTRICAL

It is believed that the vessel received the maximum amount of shock without suffering major damage. If the vessel had been a few yards closer to the blast it is thought that some of her heavy machinery would have carried away from its foundations.

V. Preliminary General or Specific Recommendations of Inspection Group.

HULL

None.

MACHINERY

The casualty to the flexible coupling of the emergency diesel generator indicates that use of cast aluminum in naval machinery should be discontinued.

This vessel's experience is an outstanding example of the fact that the radiological hazard is the most serious danger from this form of attack.

ELECTRICAL

None.

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USS BRISCOE (APA65)

TECHNICAL INSPECTION REPORT

SECTION I - HULL

GENERAL SUMMARY OF HULL DAMAGE

I. Target Condition After Test.

(a) Drafts after Test; general areas of flooding, sources.

There was no flooding, hence no change in drafts or list.

(b) Structural Damage.

In the superstructure, bulkheads are dished, both flag bags are missing, watertight and weathertight doors are dished. Some of the doors are jammed. The stacks are also dished. The upper deck cargo hatch boards are displaced. Many of the boards are creased at the mid length. The retaining straps for both port and starboard after cargo booms have been carried away.

(c) Other Damage.

Not observed.

II. Forces Evidenced and Effects Noted.

(a) Heat.

None.

(b) Fires and Explosions.

None.

(c) Shock.

The only evidence of damage that might possibly be attributed to shock, is the large number of broken electric light bulbs throughout the ship.

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USS BRISCOE (APA65)

(d) Pressure.

There is little effect of pressure as such. Structural damage is believed to have been caused by shipping of green water due to a wave created by the blast. The ship's inclinometer indicates a roll to starboard in the general order of 60 degrees and a roll of approximately 55 degrees to port.

(e) Effects apparently peculiar to the Atom Bomb.

Effects peculiar to the atomic bomb are the downfall of water and a large wave of water.

III. Effects of Damage.

(a) Effect on machinery, electrical, and ship control.

Not observed.

(b) Effect on gunnery and fire control.

Not observed.

(c) Effect on watertight integrity and stability.

None.

(d) Effect on personnel and habitability.

Personnel would have been endangered by the equipment being dislodged and thrown about the ship due to the excessive rolling. Top side personnel would have had difficulty remaining in exposed position. Heavy rolling of the ship, coupled with the heavy downpour of water from the bomb, would have washed many of the personnel overboard. Habitability of the ship is adversely affected because of the radiological condition.

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USS BRISCOE (APA65)

(e) Effect on fighting efficiency.

The fighting efficiency of the vessel would probably have been adversely affected by injuries to personnel.

IV. General Summary of Inspector's Impressions and Conclusions.

Structurally, this vessel could carry out its function but, other consideration such as personnel injuries would probably handicap its efficiency.

V. Preliminary General or Specific Recommendations of Inspection Group.

None.

VI. Instructions for loading the vessel specified the following:

ITEM	LOADING
Fuel oil	Minimum (Not more than 10%)
Diesel oil	10 tons maximum
Ammunition	10%
Potable and reserve feed water	95%
Salt water ballast	1275 Tons.

Details of the actual quantities of the various items aboard are included in Report 7, Stability Inspection Report, submitted by the ship's force in accordance with "Instructions to Target Vessels for Test and Observations by Ship's Force" issued by the Director of Ships Material. This report is available for inspection in the Bureau of Ships Crossroads Files.

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USS BRISCOE (APA65)

DETAILED DESCRIPTION OF HULL DAMAGE

A. General Description of Hull Damage.

Damage is almost entirely confined to exposed topside structure. The cause of damage is believed due to falling water and heavy rolling of the ship rather than blast or shock.

Both flag bags are missing. Bulkheads are dished. Watertight and weather tight doors are dished and some are jammed. The stacks are dished. The upper deck cargo hatch boards are displaced. Many of the boards are creased at their mid-length. The retaining straps for both port and starboard after cargo booms have been carried away. The pontoon covers of No. 2 cargo hatch on the main deck were thrown into the bottom of the hold. In general, all gear not rigidly secured was thrown about.

General views of the ship are shown on pages 38 to 41, inclusive.

B. Superstructure.

In the bridge area, doors and bulkhead are dished. Both flag bags and the access cover to the port side light are missing. Wooden gratings are in disarray about the deck.

In the midship superstructure, all watertight and weather tight doors are dished more or less; some are jammed. Quick acting doors are not affected. The stacks are dished an additional amount over that received in Test A.

Double doors in the after deck house, on the port side of the upper deck, frame 130, are forced inboard severely. There is some very slight dishing of the other watertight doors in the face of the deck house bulkhead.

The cause of damage in this area is believed due to falling water and blast rather than to shock.

There were no fires.

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USS BRISCOE (APA65)

C. Turrets, Guns and Directors

Three of the four 20 MM guns are operable; one of the guns was blown out of its cradle.

There are no gun shelters on this vessel. It is believed that personnel would have had difficulty remaining in exposed gun positions due to the heavy rolling of the ship, coupled with the downpour of water. If such personnel had survived the blast, many would have been washed overboard and drowned.

D. Torpedo Mounts, Depth Charge Gear.

Not applicable.

E. Weather Deck.

The deck itself is not damaged. The upper deck hatch boards of No. 1 hatch have been dislodged, several having been thrown to the starboard side of the weather deck, one to the port side, and the remainder dropped through to the deck below. The hatch boards over No. 2 hold are dislodged and have fallen through to the main deck and bottom of the hold. Many of these boards, both forward and aft, are creased at their mid-length. The retaining straps for both port and starboard after cargo booms have been carried away, but the booms remain supported by the running rigging.

F. Exterior Hull.

No damage.

G. Interior Compartments (above w.l.).

The pontoon covers of No. 2 cargo hatch on the main deck, which had not been welded in place as had been done in the forward hold to protect instrumentation, were thrown into the bottom of the hold.

In general, gear not rigidly secured was thrown about.

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USS BRISCOE (APA65)

H. Armor Decks and Miscellaneous Armor.

Not applicable.

I. Interior Compartments (below waterline).

No damage.

J. Underwater Hull.

No damage.

K. Tanks.

No damage.

L. Flooding.

None.

M. Ventilation.

No damage.

N. Ship Control.

No apparent damage occurred to ship control systems, except for the gyro compass which is broken, and the DRT in CIC on which the glass table top is shattered and the equipment itself is inoperable.

O. Fire Control.

No damage.

P. Ammunition Behavior.

No damage.

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USS BRISCOE (APA65)

Q. Ammunition Handling.

No damage.

R. Strength.

No damage.

S. Miscellaneous.

No comment.

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USS BRISCOE (APA65)

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TECHNICAL INSPECTION REPORT

SECTION II - MACHINERY

GENERAL SUMMARY OF MACHINERY DAMAGE

I. Target Condition After Test.

(a) Drafts after test; list; general areas of flooding, sources.

No data taken by machinery group.

(b) Structural damage.

No comment.

(c) Other damage.

Cracked paint around the foundations of the ship's service (AC) and auxiliary (DC) generator in the forward engine room indicates slight momentary displacement of these units. Three holding down bolts on the auxiliary condenser in the auxiliary machinery room sheared. Mounting bolts securing vertical reciprocating pumps were loosened on practically all of these pumps. On this vessel, most pumps are of this type. Brickwork of #2 boiler was slightly damaged. A cast aluminum link in the flexible coupling of the emergency diesel generator broke. There was some other minor damage.

NOTE: It was not practicable to test machinery or to open it for interior inspection. The only machinery on this vessel operated after Test B is the emergency diesel generator. It is considered probable that there are leaks in some of the auxiliary condensers and some other damage may exist.

II. Forces Evidenced and Effects Noted.

(a) Heat.

No evidence.

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USS BRISCOE (APA65)

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(b) Fires and explosions.

No evidence.

(c) Shock.

The BRISCOE received a fairly heavy underwater shock which caused most of the damage listed above. There are also other evidences of shock such as galley range tops thrown around and broken, loose gear scattered around, etc..

(d) Pressure.

No evidence.

(e) Effects apparently peculiar to the atom bomb.

An underwater shock of this magnitude at such a distance from an explosion is apparently peculiar to the atom bomb.

III. Effects of Damage.

(a) Effect on machinery and ship control.

Damage found by visual inspection had no appreciable effect on machinery or ship control. Breakage of the link in the flexible coupling of the emergency diesel generator did not impair operation as the generator was operated to furnish lighting current during the inspection. Additional damage such as condenser tube leaks may exist. Some additional damage might have occurred if the machinery had been operating. However, it is not believed that such additional damage would be sufficient to immobilize the ship or to seriously handicap her for more than a short time.

(b) Effect on gunnery and fire control.

No comment.

(c) Effect on water-tight integrity and stability.

No comment.

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USS BRISCOE (APA65)

(d) Effect on personnel and habitability.

The ship had high radioactivity when inspected 16 days after Test B. This would have adversely affected personnel and habitability. Otherwise, the test would have had little effect on personnel or habitability below decks.

(e) Total effect on fighting efficiency.

Damage found by visual inspection would have had no effect on fighting efficiency. It is not believed that fighting efficiency would have been seriously affected mechanically if she had been underway during the test. The affect of radioactivity might have had a serious effect on fighting efficiency.

IV. General Summary.

The BRISCOE appears to have been at approximately the limiting range of effectiveness of this type of attack against vessels of her class.

V. Preliminary Recommendation.

The casualty to the flexible coupling of the emergency diesel generator indicates that use of cast aluminum in naval machinery should be discontinued.

This vessel's experience is an outstanding example of the fact that the radiological hazard is the most serious danger from this form of attack.

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USS BRISCOE (APA65)

(a) Air casings - No apparent damage.

(b) External fittings - No apparent damage.

(c) Fuel oil burner assemblies - No apparent damage.

(d) Brickwork and furnaces - The plastic refractory at the water wall headers and around the generating tubes near the furnace floors had cracked off and fallen down. Slag on the walls had spalled, cracked off and fallen to the deck. It is considered that the amount of cracking and spalling of the brickwork was not sufficient to require any reduction in the steaming rate of the boilers and that they could have continued in operation for an extended period without repair. (Photos 4045-12, 1933-1, 2, pages 42 , 43 , and 44).

C. Boilers.

No apparent damage.

D. Fuel Oil Equipment.

No apparent damage.

E. Boiler Feedwater Equipment.

No apparent damage.

F. Main Propulsion Machinery.

There was no apparent damage to the main turbines. Leads left in the bearings of #1 main turbine indicate slight motion of the rotor (not over .0045 inch.).

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USS BRISCOE (APA65)

BEARING LEAD DATA

#1 MAIN GENERATOR - FORWARD BEARING

Forward lead	Before Test B	After Test B	Difference
Port	.0055	.005	.0005
Top	.008	.004	.004
Stb'd	.008	.005	.003
Center lead			
Port	.006	.004	.002
Top	.008	.005	.003
Stb'd	.008	.006	.002
After lead			
Port	.008	.0035	.0045
Top	.008	.004	.004
Stb'd	.008	.005	.003

G. Reduction Gears.

Not Applicable.

H. Shafting and Bearings.

No apparent damage.

I. Lubrication System.

No apparent damage.

J. Condensers and Air Ejectors.

On the auxiliary condenser, located in the auxiliary machinery room, three holding down bolts had sheared off, due to shock.

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USS BRISCOE (APA65)

Two of these bolts were on the inboard forward mounting foot and the other was on the outboard forward mounting foot. The condenser sustained no further damage and its operability was not impaired, insofar as could be determined from visual inspection. (See photos 4065-9 and 10, pages 45 , and 46).

The auxiliary condenser in the forward engine room had shifted slightly on its foundation, and holding down bolts were stretched beyond their elastic limit and were loose, but not broken. See photo 4044-1, page 47 , for full view of condenser and photograph 4044-2, page 48 , for mounting foot.

The shock may have caused tube leaks in these condensers, which cannot be determined from visual inspection.

There was no other apparent damage to condensers.

K. Pumps.

On practically all vertical reciprocating pumps, the bolts securing the steam end to the ship's structure had been stretched and were loose in the holes. In one case, (#1 fuel oil transfer pump) one bolt was missing. Photo 4044-4, page 49 , is of #1 fuel oil transfer pump but may be considered as typical of all vertical reciprocating pumps on this vessel. It is not believed that this would have impaired operability of the pumps.

The hot water circulating pump mounted under the hot water heater in the forward engine room, had a broken discharge nozzle, caused by shock. (Photo 4044-5, page 50).

There was no other apparent damage to pumps.

L. Auxiliary Generators (Turbines and Gears).

The 100kw D.C. generator (for deck machinery power) and the ship's service A.C. generator in the forward engine room showed some evidence of shifting slightly on their foundations

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USS BRISCOE (APA65)

(cracked paint around foundation bolts) (See photos 4064-11, 12, 4065-1, pages 64 , 62 , and 60). This shifting was very slight and it is considered that the operability of the generators would not have been affected.

The lube oil cooler on the auxiliary generator in the auxiliary machinery room had a mounting foot broken (See photo 4065-8, page 51). This mounting in a cast iron saddle and is not a part of the cooler shell. This failure would not have impaired operability.

There was no other apparent damage to turbo-generators.

Leads left in the turbine bearings of #1 ship's service generator during the test indicate slight movement of the rotor (not over .0045 inch).

NO. I AUXILIARY TURBINE GENERATOR - TURBINE BEARING BETWEEN TURBINE AND REDUCTION GEARS.

Forward lead	Before Test B	After Test B	Difference
Port	.0065	.005	.0015
Top	.007	.005	.002
Stb'd	.0065	.004	.0025
Center lead			
Port	.0075	.0045	.003
Top	.0075	.005	.0025
Stb'd	.006	.004	.002
After lead			
Port	.009	.0045	.0045
Top	.009	.004	.005
Stb'd	.0075	.004	.0035

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USS BRISCOE (APA65)

M. Propellers.

Not observed. There is no reason to believe that the propellers are damaged.

N. Distilling Plant.

No apparent damage.

O. Refrigeration Plant.

No apparent damage.

P. Winches, Windlasses, and Capstans.

No apparent damage.

Q. Steering Engine.

No apparent damage.

R. Elevators, Ammunition Hoists, Etc..

Elevators - not applicable.

The ammunition hoists were not observed.

S. Ventilation (Machinery).

The ventilation machinery was not observed.

T. Compressed Air Plant.

No apparent damage.

U. Diesels (Generators and Boats).

One end of one of the four double-ended links in the flexible coupling between the emergency generator and its diesel engine

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USS BRISCOE (APA65)

broke. This link is of cast aluminum. The casualty did not impair operation. The generator was operated under load in this condition, and performed normally.

No boats were aboard during Test B.

V. Piping Systems.

One spring hanger on main steam piping in the after engine room had broken. (Photo 4044-6, page 52). The threads in the spring casing top, where the eye bolt is attached, were stripped. The eye bolt was screwed into the spring casing top, where the eye bolt is attached, were stripped. The eye bolt was screwed into the spring casing top only 3/8 inch (about 4 threads).

There was no other apparent damage to piping.

W. Miscellaneous.

(a) Messing machinery.

Not observed.

(b) Messing equipment.

Galley range tops were disarranged and broken by shock. (Photo 4045-10, 11, pages 53 , and 54).

(c) Laundry equipment.

Not observed.

(d) Machine shop equipment.

Not observed.

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USS BRISCOE (APA65)

TECHNICAL INSPECTION REPORT

SECTION III - ELECTRICAL

GENERAL SUMMARY OF ELECTRICAL DAMAGE

I. Target Condition After Test.

- (a) Drafts after test; list; general areas of flooding, sources.

Drafts and list not observed. There was no flooding.

- (b) Structural damage.

Not observed.

- (c) Other damage.

The only positive electrical damage included the gyro compass, portable storage batteries, and scattered lighting fixtures.

II. Forces Evidenced and Effects Noted.

- (a) Heat.

There was no evidence of heat.

- (b) Fires and explosions.

There were no fires or explosions.

- (c) Shock.

There were indications of shock in the engineering spaces, as evidenced by cracked paint and missing hold down bolts on heavy machinery in both engine rooms and auxiliary machinery space.

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USS BRISCOE (APA65)

(d) Pressure.

No evidence of pressure was observed.

(e) Any effects apparently peculiar to the atom bomb.

High radioactivity which persisted after the test was the only peculiar effect noted.

III. Effects of Damage.

(a) Effect on propulsion and ship control.

It is believed propulsion and ship control was not seriously affected.

(b) Effect on gunnery and fire control.

Not affected by electrical failures.

(c) Effect on water-tight integrity and stability.

Not affected.

(d) Effect on personnel and habitability.

Personnel and habitability were not affected by any electrical failures.

(e) Total effect on fighting efficiency.

None due to electrical failures.

IV. General Summary of Observers' Impressions and Conclusions.

It is believed that the vessel received the maximum amount of shock without suffering major damage. If the vessel had been a few yards closer to the blast it is thought that some of her heavy machinery would have carried away from its foundations.

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USS BRISCOE (APA65)

V. Any Preliminary General or Specific Recommendations of the Inspecting Group.

None.

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USS BRISCOE (APA65)

DETAILED DESCRIPTION OF ELECTRICAL DAMAGE

A. General Description of Electrical Damage.

(a) Overall condition.

From visual inspection there is evidence of great shock. It is not known if any machinery was misaligned or not as a result of shock.

(b) Areas of major damage.

Areas most affected were engine rooms and auxiliary machinery space.

(c) Primary causes of damage in each area of major damage.

Shock was the only cause of damage.

(d) Effect of target test on overall operation of electric plant.

From visual inspection it appears that the electrical plant is still operable. However, no operational tests were held on the vessel and no machinery was jacked over by hand.

(e) Types of equipment most affected.

Heavy equipment in both engine rooms and auxiliary machinery spaces were the most affected.

B. Electric Propulsion Rotating Equipment.

There was no visual evidence of damage to propulsion rotating equipment. The inboard vent blower on the after main propulsion motor would not turn by hand although there was no evidence of misalignment.

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USS BRISCOE (APA65)

C. Electric Propulsion Control Equipment.

No damage.

D. Generators - Ships Service.

(a) All three 90 KW propulsion exciter sets and the two 100 KW D.C. sets showed signs of movement and the paint around the hold-down bolt heads of all machines was cracked. The two 100 KW and the Nos. 2 and 3 exciter units showed signs of the bedplates shifting on the ship's structure; the 2 and 3 machine hold down bolts being found loose with those on the latter showing signs of stretching.

Ref. photographs No. 4064-11, page 64 ; No. 4064-10, page 63 .

(b) The paint on the end bell joints of the 90 KW exciter units and the smaller exciters for the same machines, and around the bolt heads for those bells was cracked showing some movement and slight stretching of the bolts.

Ref. photographs 4064-12, page 62 ; 4065-5, page 59 ; 4065-1, page 60 .

(c) The supporting castings for the oil coolers on the Nos. 1 and 2 exciter units were cracked.

E. Generators - Emergency.

(a) Generator was operated satisfactorily after Test B.

(b) One link of coupling between engine and generator cracked but unit remained operable. The machine ran during the test until out of fuel, as indicated by Commanding Officers Report No. 5.

F. Switchboards, Distribution and Transfer Panels.

No damage.

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USS BRISCOE (APA65)

G. Wiring, Wiring Equipment and Wireways.

No damage.

H. Transformers.

No damage.

I. Submarine Propelling Batteries.

This item does not apply.

J. Portable Batteries.

The only damage to portable batteries occurred in the battery charging station where the shock dislodged all portable batteries from their normal stowage allowing them to fall to the deck where they suffered damage in varying degrees from cracked jars to complete destruction.

K. Motors, Motor Generator Sets and Motor Controllers.

No damage.

L. Lighting Equipment.

The only damage observed was a few broken lamps throughout the vessel. General lighting was restored by replacing the broken lamps.

M. Searchlights.

One 24 inch searchlight was damaged. The lamp mechanism was missing from the barrel. (Lamp was observed from long range only as the radioactivity in the area was too high to enter).

N. Degaussing Equipment.

From visual inspection, there was no damage to the control panel. Coils were not observed.

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O. Gyro Compass Equipment.

The gyro moved vertically about fifteen inches, allowing the compass to strike and dent the metal cover on the terminal block in the base of the binnacle stand.

Some coil suspension springs were elongated, others pulled free from the compass. Traces of mercury were found on the phantom ring and in the binnacle case.

It is believed that the suspension cable is either broken or elongated enough to allow the rotor case to rest on the vertical ring bearing. No operational test was made. Ref. photographs No. 4065-6, page 58 ; No. 4065-7, page 57 .

P. Sound Powered Telephones.

No damage.

Q. Ship's Service Telephones.

This item does not apply.

R. Announcing Systems.

From visual inspection, the general announcing system appears to be undamaged. One transmitter was exposed to high pressure salt water from fire hose during decontamination work and is believed to be grounded. However, no operational test was conducted. The 21 MC operated satisfactorily on test.

S. Telegraphs.

Visual inspection indicates no damage. However, operation tests were not conducted.

T. Indicating Systems.

Visual inspection indicates no apparent damage. Operation tests were not conducted.

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U. I.C. and A.C.O. Switchboards.

No apparent damage. Operational tests were not conducted.

V. F.C. Switchboard.

This item does not apply.

W. Miscellaneous.

No comment.

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USS BRISCOE (APA65)

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SECTION IV

PHOTOGRAPHS

TEST BAKER

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USS BRISCOE (APA65)



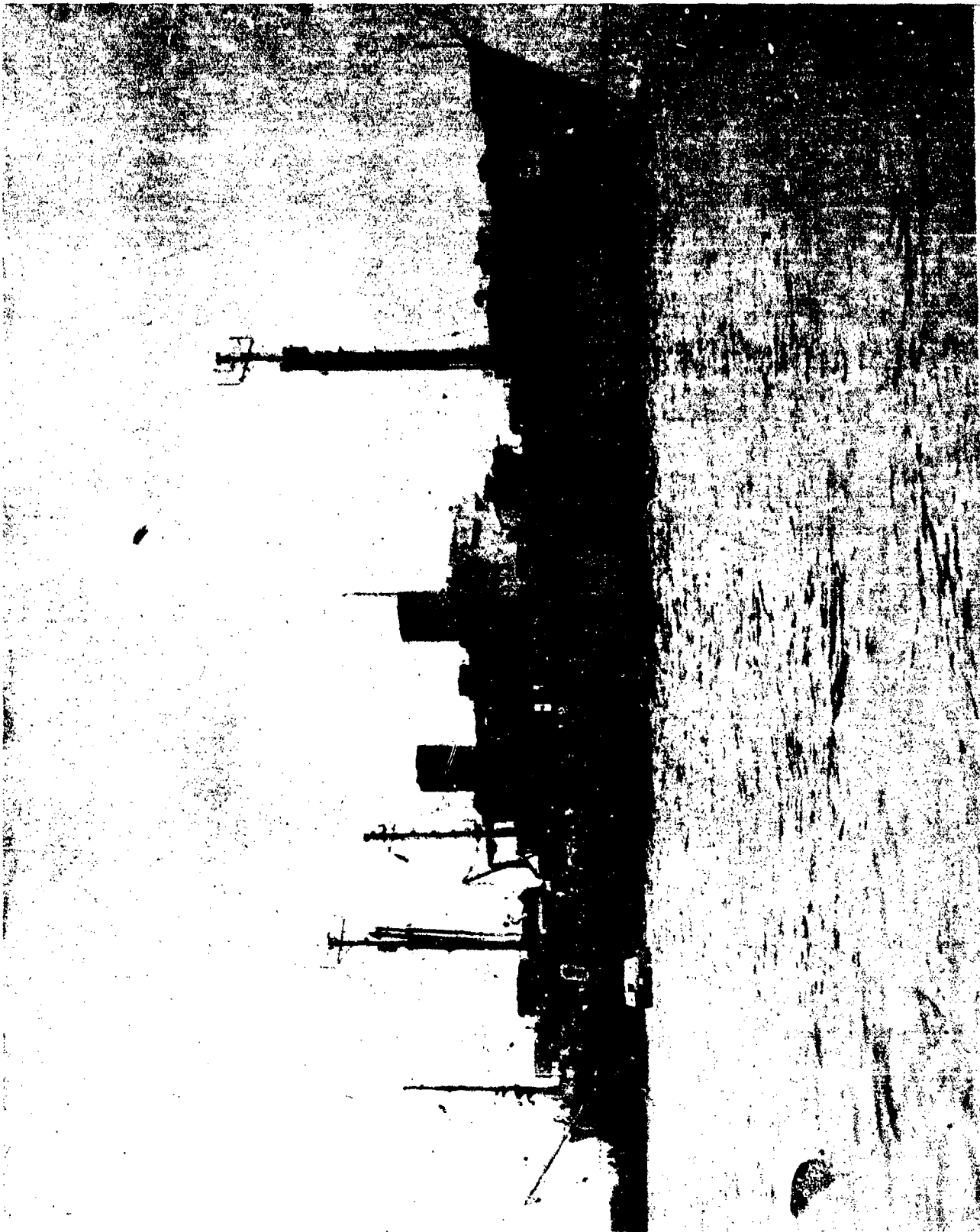
BB-CR-227-501-59. View from starboard bow before Test B.

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AB-CR-227-289-62. View from starboard bow after Test B.

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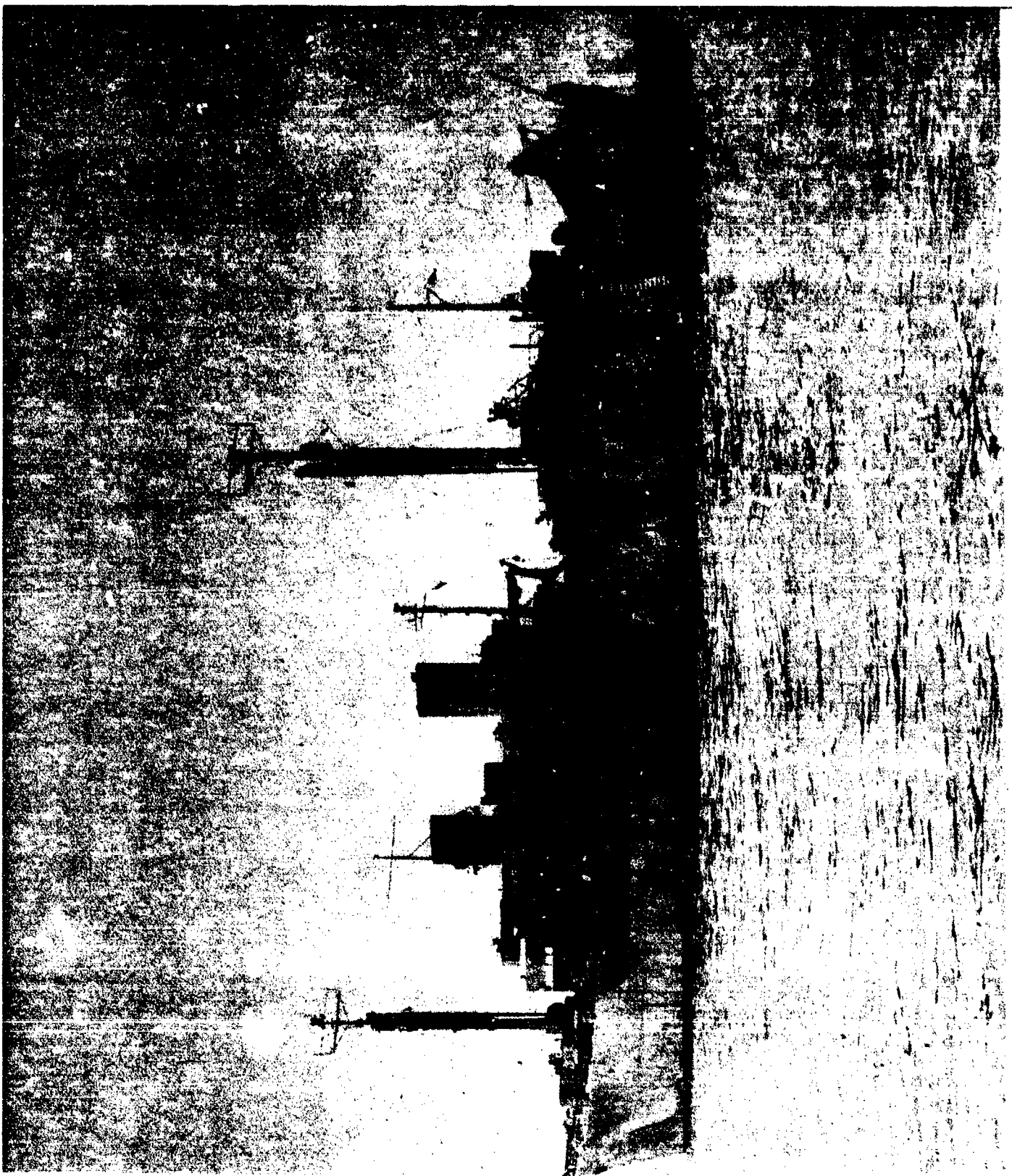
BB-CR-227-501-63. View from port quarter before Test B.

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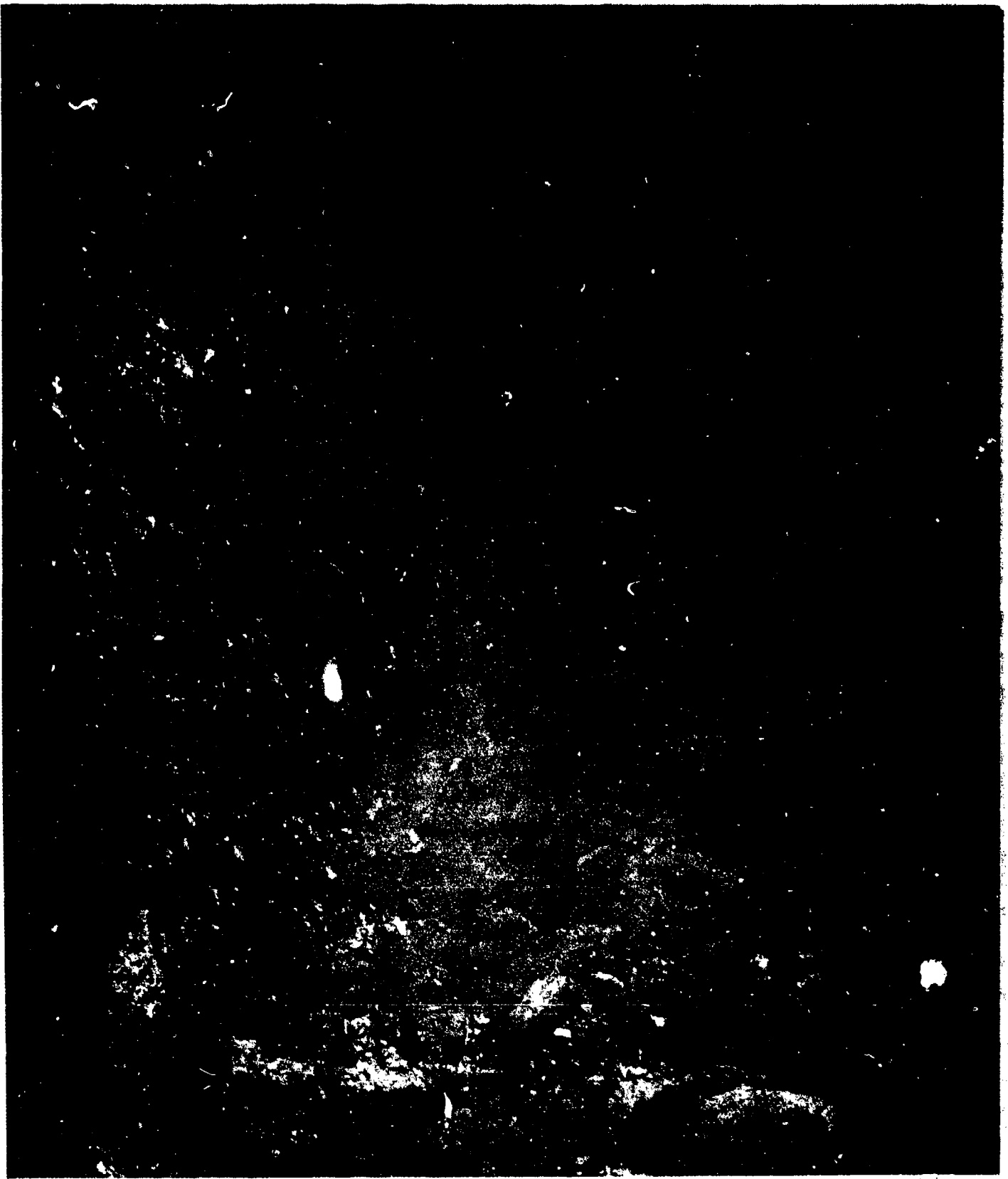
AB-CR-227-289-58. View from port quarter after Test B.

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AB-CR-97-4045-12. No. 1 boiler, furnace floor.

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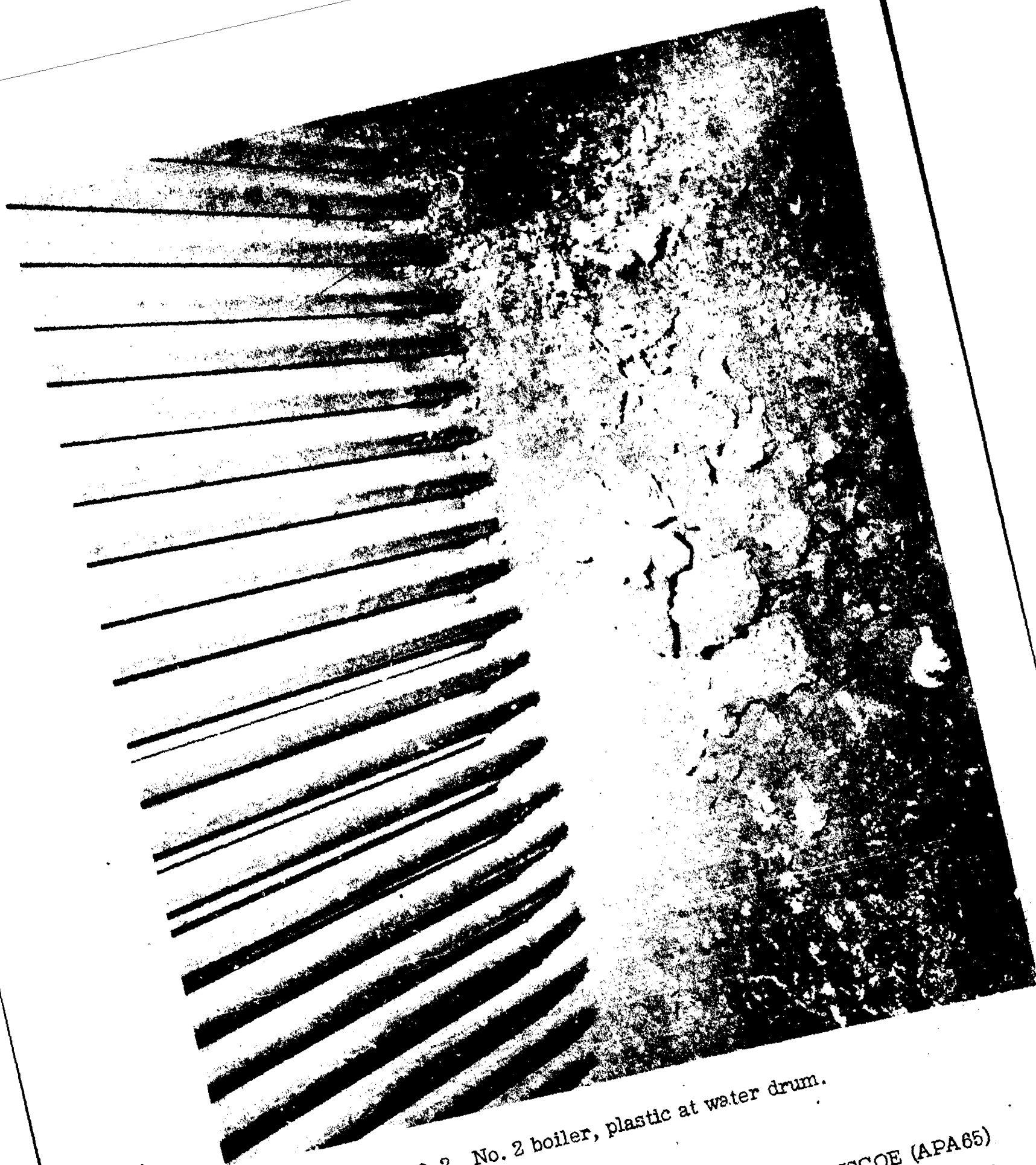
AB-CR-76-1933-1. No. 2 boiler, plastic at bottom of water wall.

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AB-CR-76-1933-2. No. 2 boiler, plastic at water drum.

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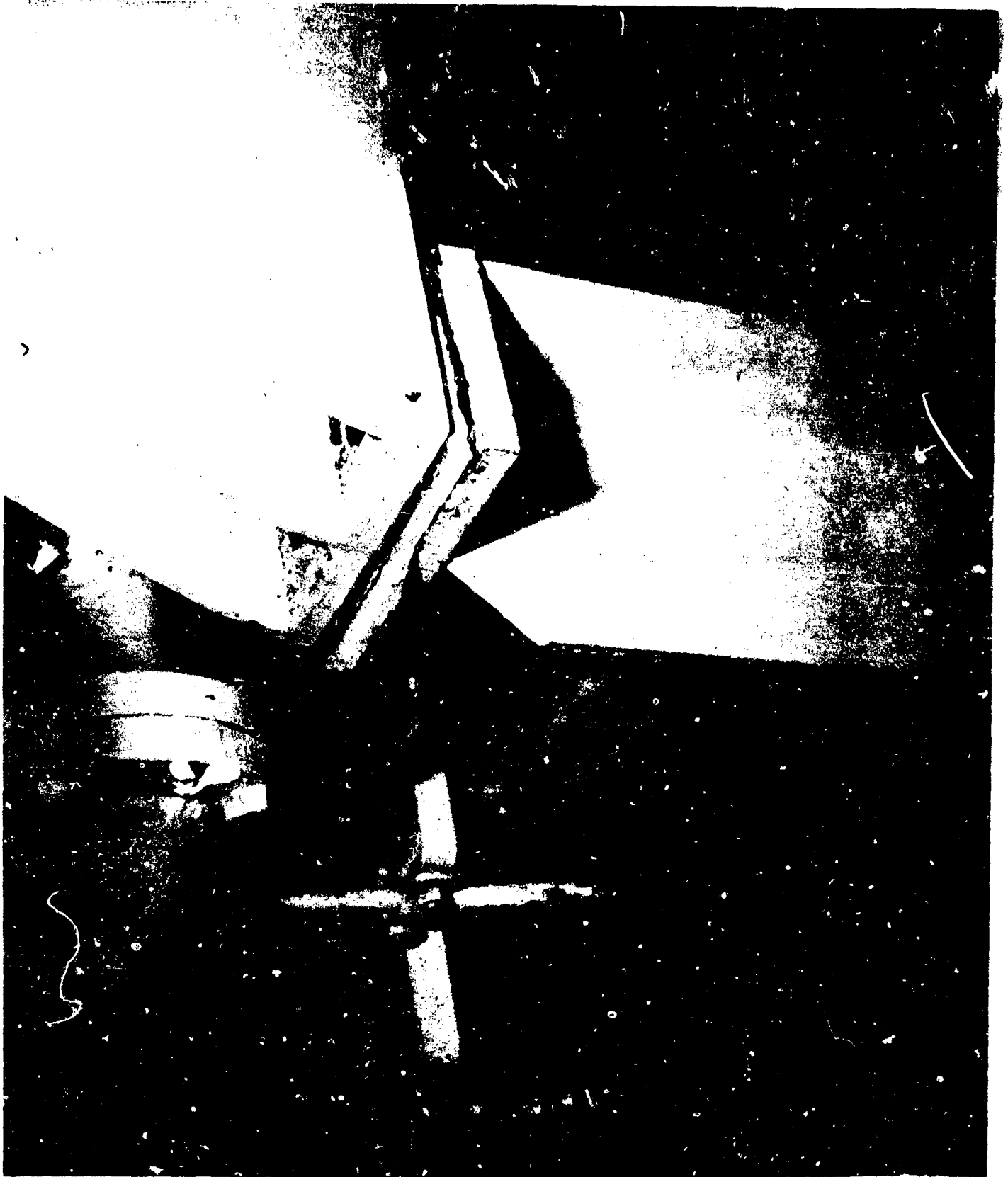
AB-CR-234-4065-9. Auxiliary generator condenser, auxiliary machinery space.

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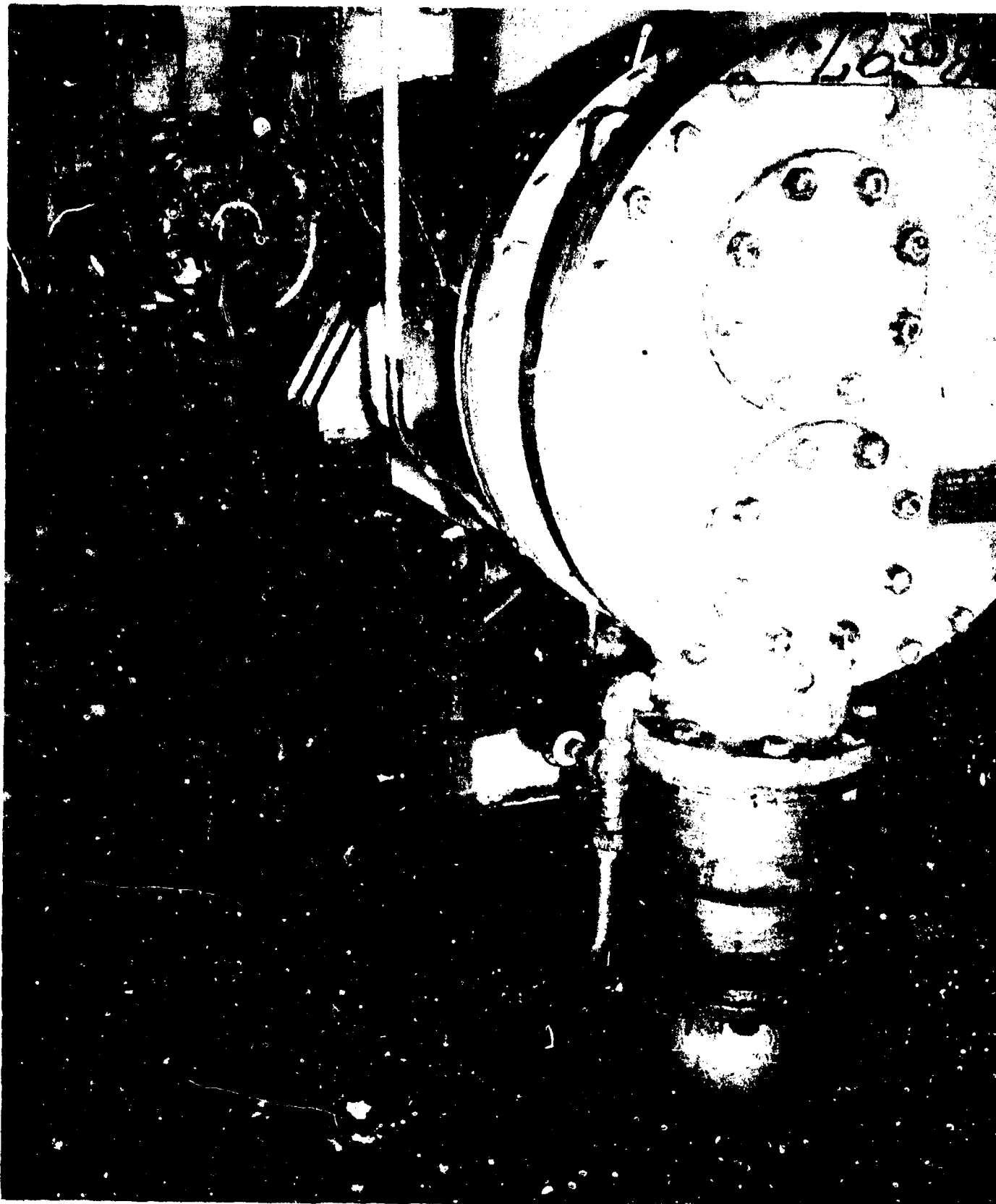
AB-CR-234-4065-10. Auxiliary generator condenser, auxiliary machinery space.

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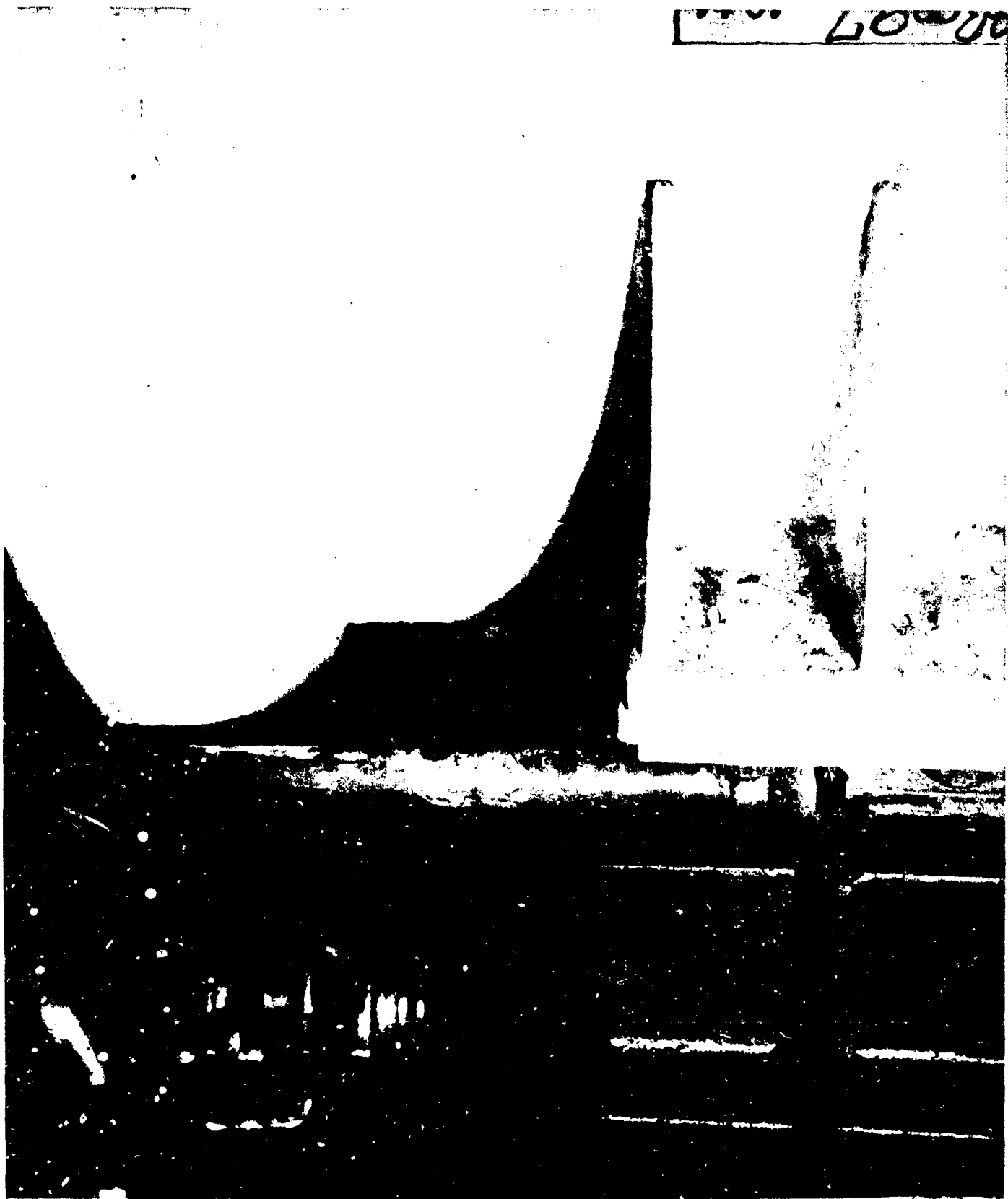
AB-CR-97-4044-1. Ship's service auxiliary generator, No. 1 engine room.

SECRET

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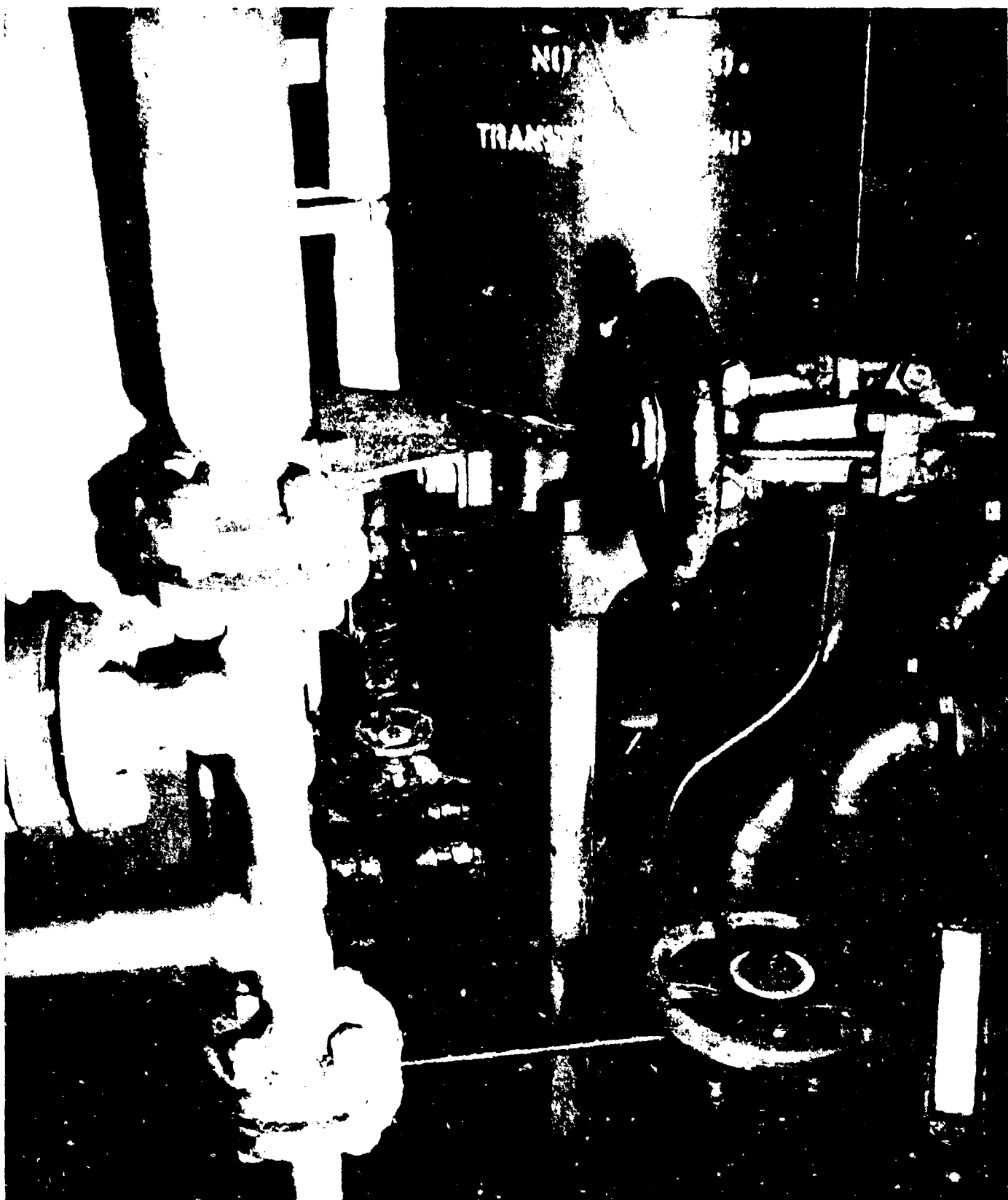
AB-CR-97-4044-2. Mounting foot for ship's service auxiliary condenser, No. 1 engine room.

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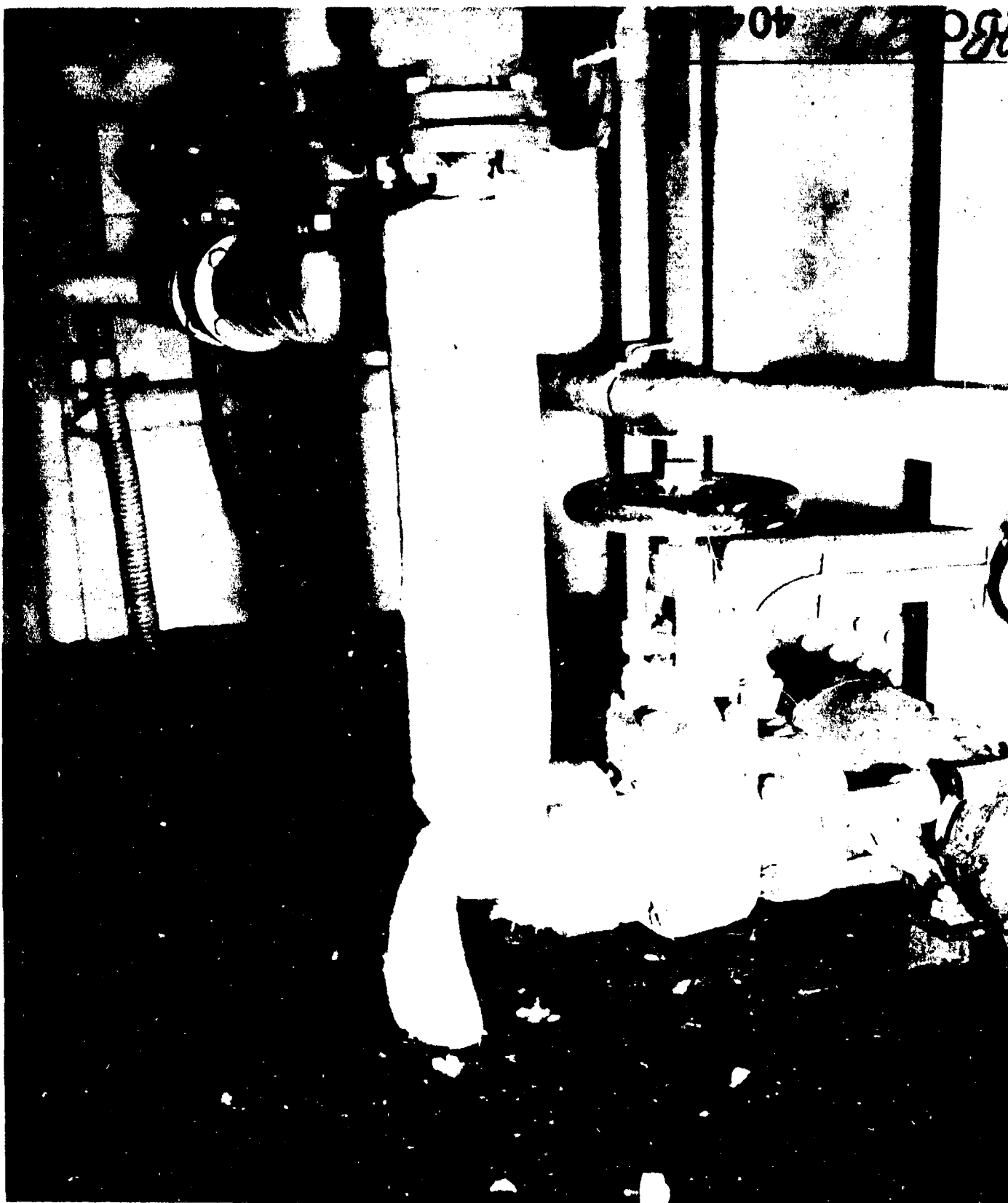
AB-CR-97-4044-4. No. 1 fuel oil transfer pump foundation bolts.

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AB-CR-97-4044-5. No. 1 engine room, fresh water circulating pump.

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AB-CR-234-4065-8. Lube oil cooler, auxiliary generator in auxiliary machinery space.

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AB-CR-97-4044-6. No. 2 engine room, main steam pipe hangar.

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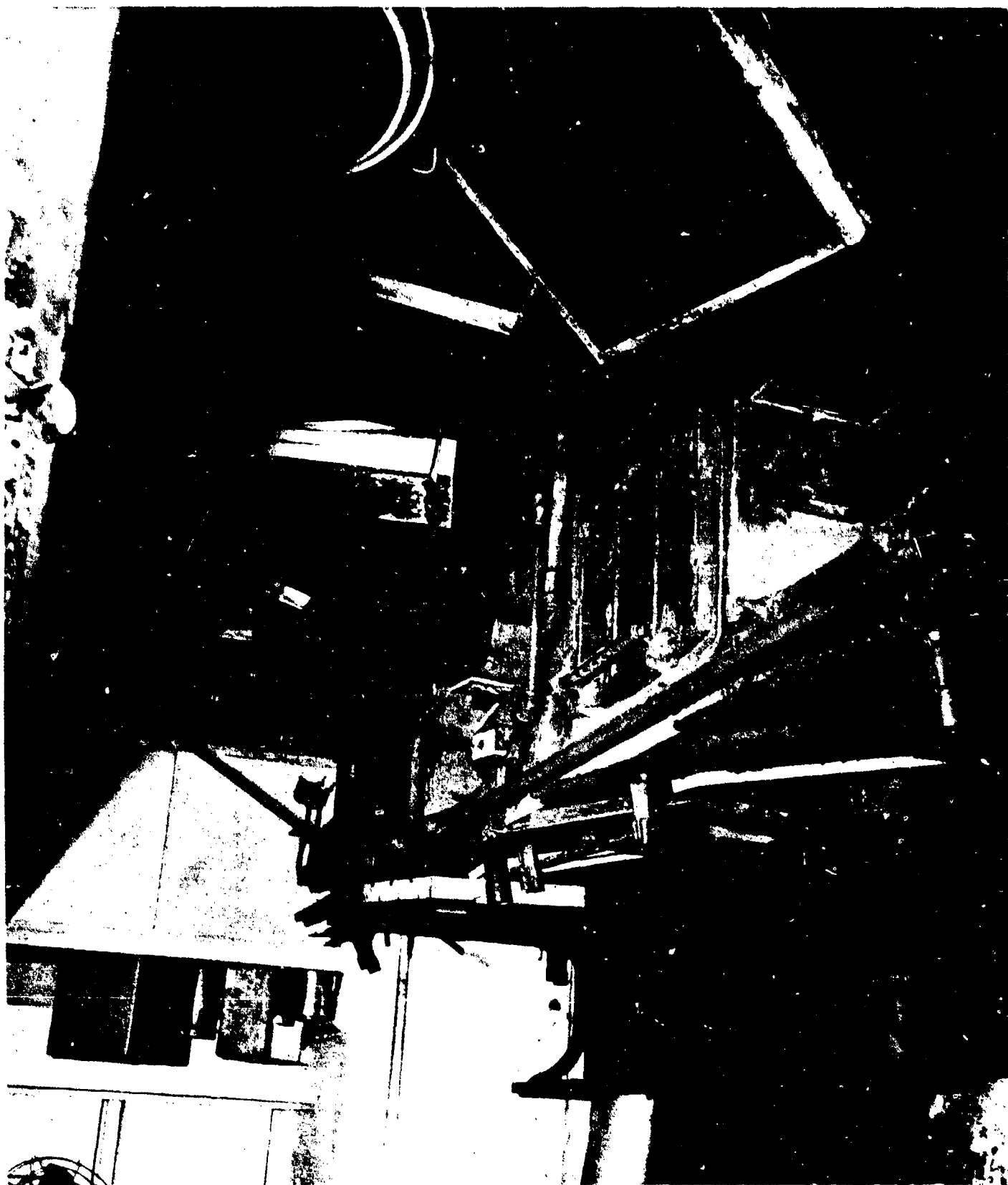
AB-CR-97-4045-10. Galley range.

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AB-CR-97-4045-11. Galley range.

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AB-CR-234-4065-3. View #3 ships service generator after engine room -
looking forward. Showing cracked paint around starboard side of end bell.
Evidence of heavy strain from shock.

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AB-CR-234-4065-4. View of #3 ships service generator, located in after engine room. Showing cracked paint at point where exciter bolts to alternator frame. Evidence of shock.

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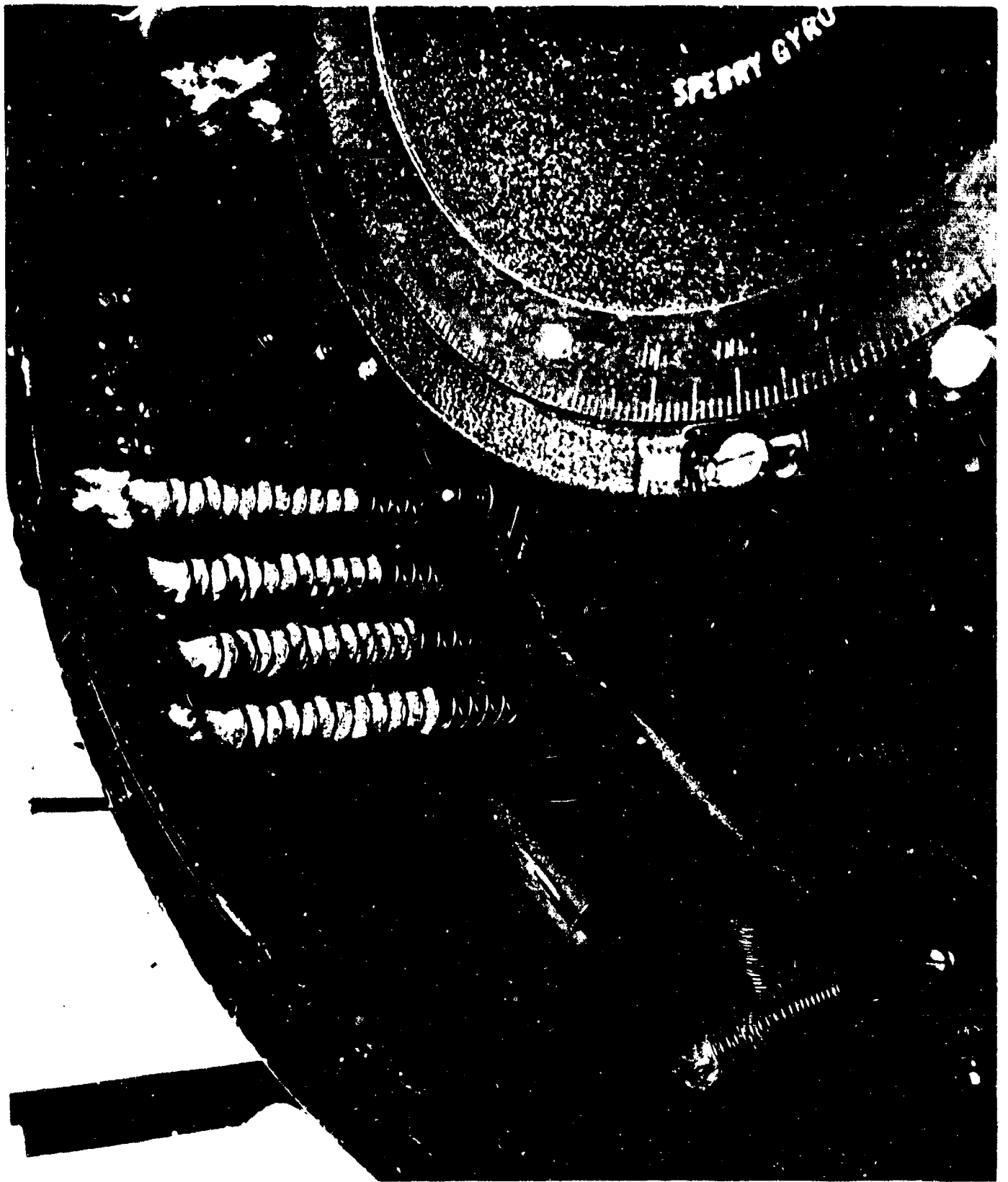
AB-CR-234-4065-7. Side view of master gyro showing position of sensitive element with elongated suspension springs.

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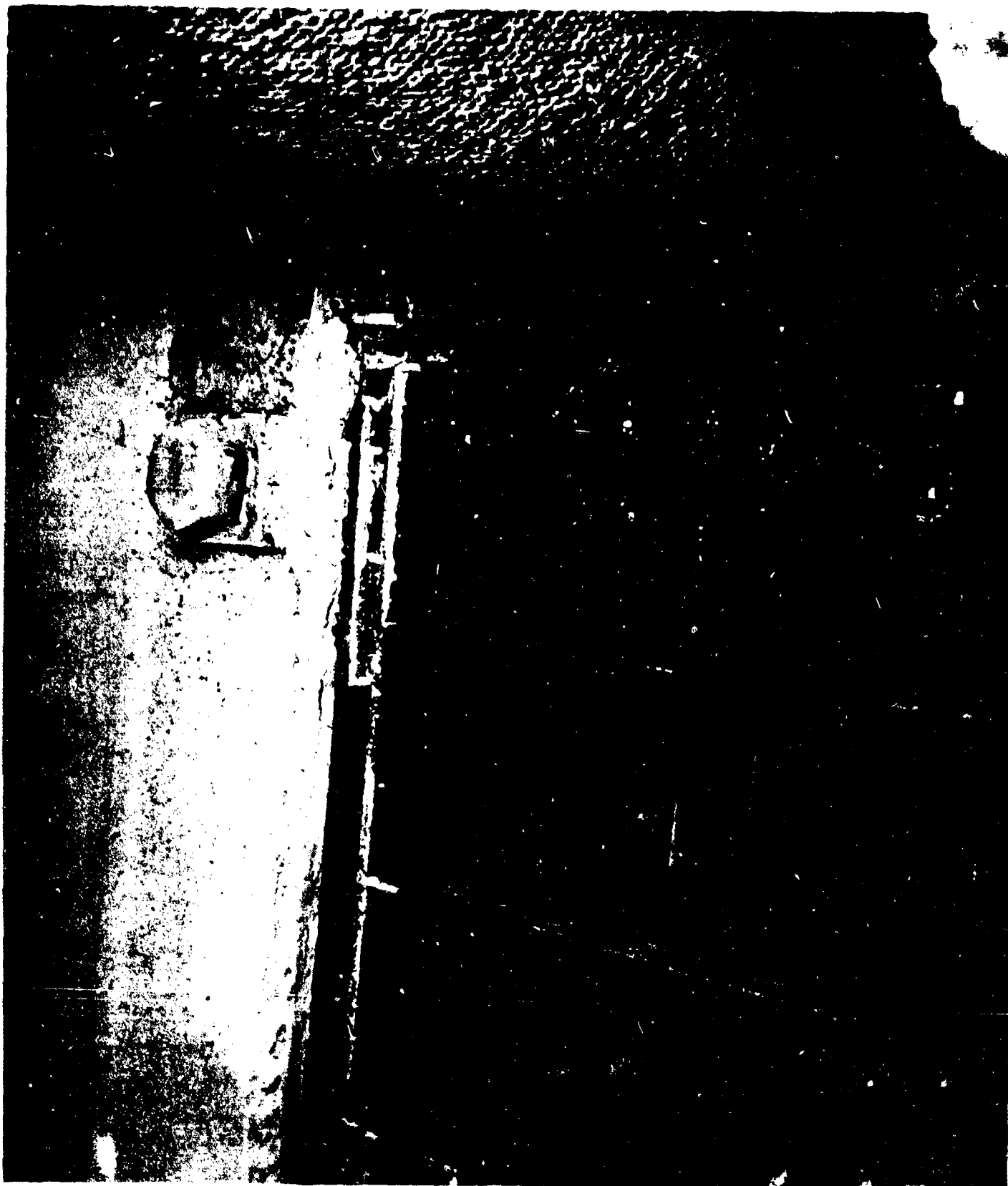
AB-CR-234-4065-6. View of master gyro showing elongated suspension springs, and springs disconnected.

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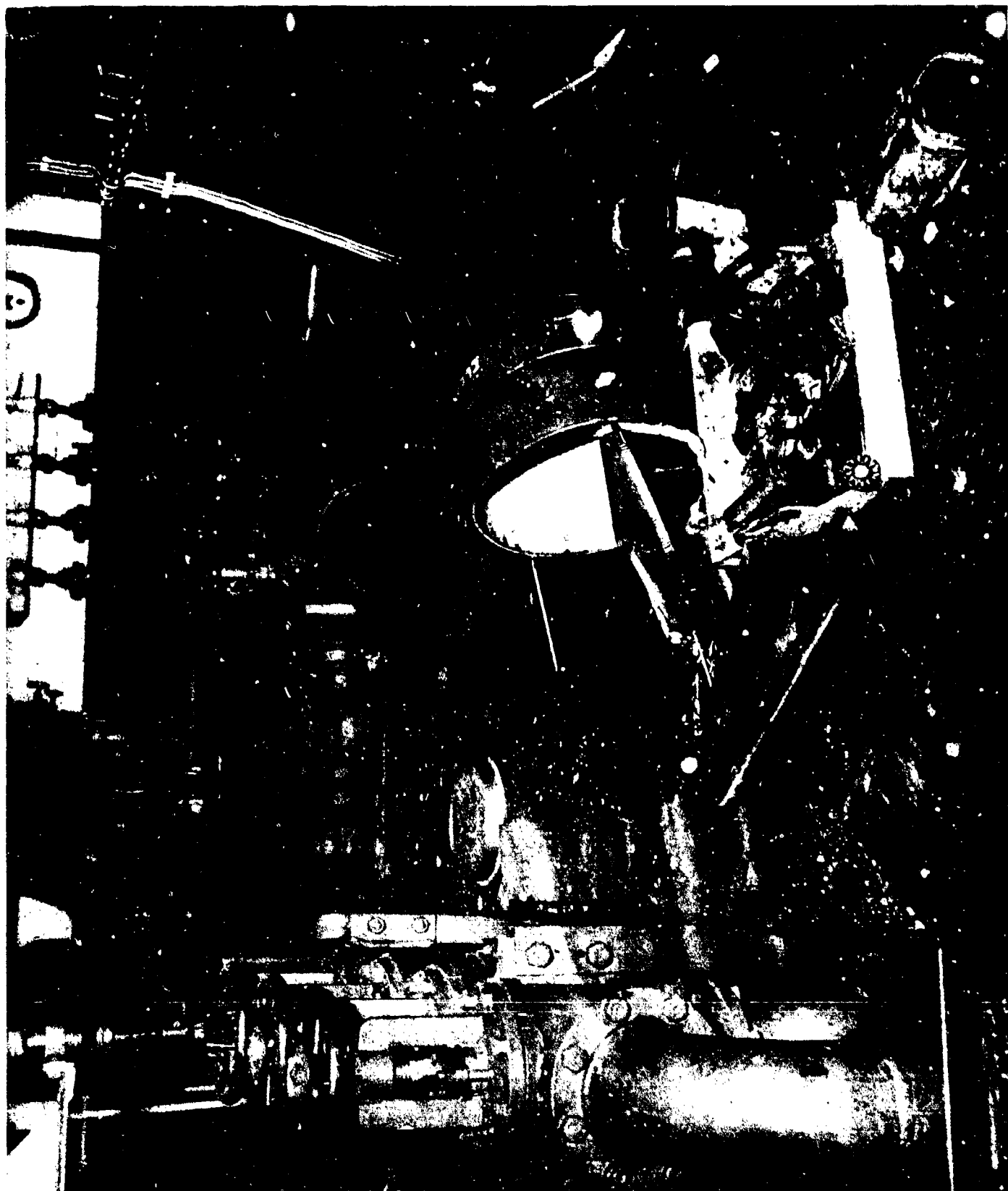
AB-CR-234-4065-1. View of cracked paint around head of hold down bolt on #3 ships service generator. Bolt is in after port foundation. Photo shows evidence of great strain from shock.

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AB-CR-234-4065-2. Miscellaneous gear adrift in forward port corner of after engine room, the result of shock.

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AB-CR-234-4064-12. View of No. 3 ships service generator showing cracked paint and loose bolt at starboard after corner of foundation.

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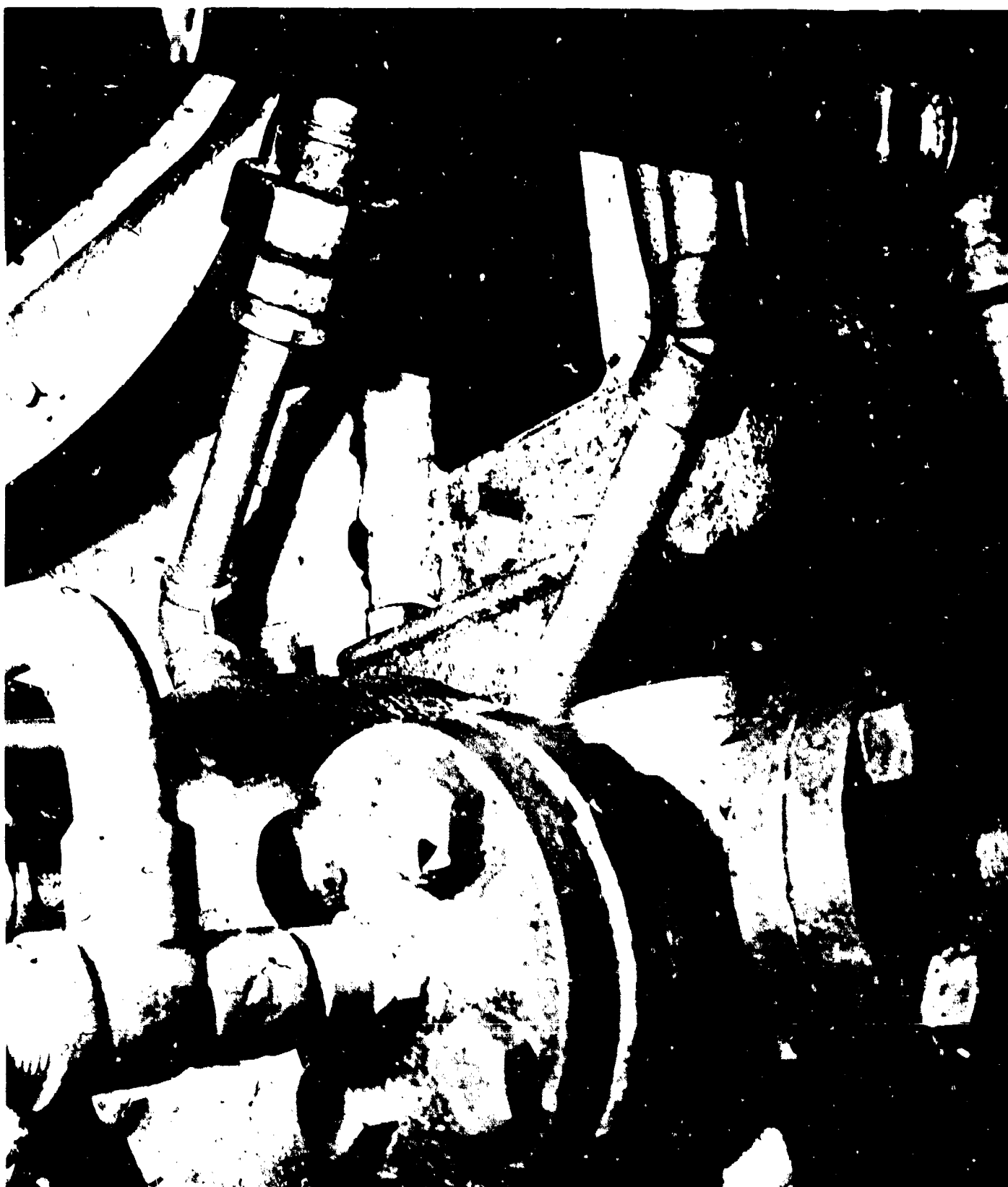
AB-CR-234-4064-10. View of 100 KW.D.C. generator, showing cracked paint around forward inboard holding down bolt, also cracked paint between generator foot and foundation. Evidence of movement of machine on its foundation.

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AB-CR-234-4064-11. View of 100 KW. DC. generator showing cracked paint around forward inboard holding down bolt and between generator foot and foundation.

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APPENDIX

COMMANDING OFFICERS REPORT

TEST BAKER

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COMMANDING OFFICERS REPORT

REPORT # 11

SECTION - I

PART - A GENERAL SUMMARY

1. The drafts after test were the same as before. There was no list and no evidence of flooding.

There was extensive slight blast damage, port side, superstructure, as shown by dishing in by doors, stacks and bulkheads.

In general operability of equipment was not affected.

The gyro compass was put out of commission.

There was no evidence of excessive heat; there were no fires; it is believed that personnel directly exposed on the port side would have been immediate casualties. For all operations except those involving boats, the number of personnel exposed would have been low. Due to the closeness of the ship to the point of detonation, it is quite possible that large numbers of other personnel would have suffered permanent and fatal casualties due to radioactive effects at the instant of the blast.

II. The ship was moored normal to the direction of the blast. The effect of the heat penetration is not known. All magazine thermometers were broken except in the 5" magazine, where the maximum reading was 96°.

There were no fires or explosions.

There was considerable shock effect evidenced. Practically all holding down bolts had been loosened, apparently stretched. With the exception of the gyro compass, which was not secured rigidly enough, there appeared to be no damage that would prevent operation of equipment.

There was considerable blast effect evidenced. Floor plates, gratings, loose gear had been moved and scattered about, considerable soot had been drawn into the engine spaces; bulkheads and doors had been dished, main cargo hatches had been blown open.

Effects peculiar to the atom bomb are the greater distance at which it is damaging and the completely disruptive effect of radio activity.

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III. No apparent damage observed. Machinery was "shocked", foundation bolts were strained and stretched but no machinery was apparently put out of line.

This ship had only four 20MM guns installed. One gun was thrown out of its cradle, as the forward securing lug carried away.

After initial blast, the topside spaces were habitable for periods of 1 - 2 hours; below the main deck level, for indefinite periods.

The effect of blast on personnel is not known, no comment is made. But the ship materially was not damaged or rendered inoperable.

IV. Damage caused by this type of explosion was impressive. The ship rolled 63° to starboard and 58° to port, according to the bridge inclinometer. Though three anchors were down, and the moor was quite taut, no chain carried away; the links securing the loops of the chain to the anchor underfoot all carried away. The anchor chain itself appeared to have been exposed to heat effect, as the metal itself was blackened.

V. No comment.

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USS BRISCOE (APA-65)

PART - C
INSPECTION REPORT
SECTION - I HULL

A. General Description of Hull Damage.

- (a) The overall condition of the ship was good, except for general disarray.
- (b) There was no apparent hull damage. (Three holes were punched in the starboard side plating, below main deck, evidently by salvage vessels.)
- (c) No comment.
- (d) There was no flooding.
- (e) No damage to hull affecting operability.

B. Superstructure (exclusive of gun-mounts)

- (a)
 - 1. In the bridge area there was ample evidence of shock and blast effects. The access cover to the port side light was carried away from its fitting; wooden gratings were in disarray about the deck. Both flag bags, port and starboard carried away, and doors and bulkheads were dished.
 - 2. The blast effect was evident in the forward superstructure in wake of stacks; all watertight and weather tight doors were dished more or less; some were jammed. Quick acting doors were not affected. Both stacks were dished.
 - 3. The after deckhouse showed the greatest disruptive effect of the blast; the double doors to the boat shop were blown in. All other doors on the port side, in this area, were jammed or dished.

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- (b) Apparently the cause of damage was due to the blast.
- (c) There was no fire.
- (d) No comment.
- (e) It is not believed that streamlining will appreciably reduce this blast damage, as the stacks were partially streamlined, yet they showed marked damage. It is thought that the only prevention of this type of damage lies in the elimination of the structure, or where this cannot be done, a suitable strengthening of structures to an acceptable degree.

C. Turrets Guns and Directors.

- (a) Not applicable.
- (b) 1. Three of the 4 20MM guns were operable: one of the guns was blown out of its cradle.

2. There were no gun shelters; it is possible that all the gun crews would have been killed by the blast.
- (c) Not applicable.
- (d) It would appear desirable for exposed gun crews to have available suitable blast shelters, which will also shield from radioactive effects - if warning of this bomb can be anticipated. (If this bomb can not be warned against, it would appear useless to set up protection for exposed personnel for light machine guns, and this exposure would only be one of the other necessary risks.)

D. Torpedo Mounts, Depth Charge Gear.

Not applicable.

E. Weather Deck.

- (a) The weather deck in general was not damaged.

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- (b) No comment.
- (c)
 - 1. Not damaged.
 - 2. No boats were aboard; life rafts were not damaged.
 - 3. Not applicable.
 - 4. Not applicable.
- (d) Miscellaneous - Cargo Handling Gear.
The gear forward was not damaged. The after booms carried away from their securing collars, but were supported by their tackle gear.
Boat Davits - This gear appeared undamaged.

F. Exterior Hull.

No comment.

G. Interior Compartments. (Above waterline).

- (a) The most obvious damage was in the hold spaces.
Both hatch tops were blown out, the metal hatch boards were distorted, sprung, and thrown about; in the hold, the large pontoons, which had not been welded in place, as had been done forward to protect instrumentation, were thrown into the bottom of the hold.
- (b) Very minor damage.
- (c) No comment.
- (d) In general, all loose gear, or gear rigidly secured to the bulkheads was thrown about.
- (e) There was no fire.
- (f) No apparent damage; emergency lighting circuits and fire mains were tested, appeared satisfactory.

H. Armor Decks.

Not applicable.

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USS BRISCOE (APA-65)

I. Interior Compartments.

No damage.

J. Underwater Hull.

No damage.

K. Tanks.

No damage.

L. Flooding.

No flooding occurred.

M. Ventilation.

No apparent damage.

N. Ship Control.

No apparent damage to ship control systems, except for the gyro compass which was broken, and the DRT in CIC on which the glass table top was shattered and the equipment was inoperative.

O. Fire Control.

No comment.

P. Ammunition Behavior.

(a) No damage.

(b) Ammunition was thrown about in the spaces, the ship having a 10% allowance, but it was not damaged.

(c) No explosions occurred. The detonators in the mine installed on deck did not fire.

(d) No damage.

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USS BRISCOE(APA-65)

Q. Ammunition Handling.

No comment.

R. Strength.

No observation. There was no evidence of structural failures of the hull.

S. Miscellaneous.

No comment.

SECRET

USS BRISCOE (APA-65)

PART - C

INSPECTION REPORT

SECTION II - MACHINERY

A. General Description of Machinery Damage.

In general, there was no evidence of major machinery damage. All holding down bolts had loosened, stretched due to shock, without apparently affecting machinery alignment, as turbines and shafts were easily moved.

B. Boilers.

No damage except for extensive crumpling of the deck brickwork.

C. Blowers.

No apparent damage.

D. Fuel oil equipment.

No apparent damage.

E. Boiler feedwater equipment.

No apparent damage.

F. Main Turbines.

No apparent damage.

G. Reduction gears.

Not applicable. No apparent damage to main motors.

H. Shafting and bearings.

No apparent damage, but leads in bearings indicated shock.

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USS BRISCOE (APA-65)

I. Lubrication system.

No apparent damage.

J. Condensers and air ejectors.

No apparent damage.

K. Pumps.

No apparent damage.

L. Auxiliary Generators.

No apparent damage.

M. Propellers.

No apparent damage.

N. Distilling plant.

No apparent damage.

O. Refrigerating plant.

No apparent damage.

P. Winches, Windlasses and Capstans.

No damage. Both capstans operated satisfactorily on recovery of anchors.

Q. Steering engine.

No apparent damage.

R. Elevators, ammunition holsts, etc.

No apparent damage.

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USS BRISCOE (APA-65)

S. Ventilation.

No apparent damage, but exterior screens and covers were blasted loose in some instances, and screens were dished in.

T. Air compressors.

No damage.

U. Diesels. (Generators and Boats)

No damage. (No Boats on board)

V. Piping.

No apparent damage other than considerable lagging being shaken clear, and the discharge piping of the hot water pump had broken.

W. Miscellaneous.

No comment.

SECRET

USS BRISCOE (APA-65)

PART - C
INSPECTION REPORT
SECTION III _ ELECTRICAL

A. General Description of Electrical Damage.

No general extensive electrical damage, but some lights and certain exposed lighting circuits were broken.

B. Electric Propulsion Rotating Equipment.

No apparent damage.

C. Electric Propulsion Control Equipment.

No apparent damage.

D. Generators - Ships Service.

No apparent damage.

E. Generators - Emergency.

No serious damage. Some evidence of shock. One section of flexible coupling was broken, two engine head covers were blown off, and air filter was blown off. Machine operated satisfactorily. (It was running during and after the blast).

F. Switchboards, Distribution and Transfer Panels.

No apparent damage.

G. Wiring, Wiring Equipment, and Wireways.

No apparent damage except for certain exposed circuits.

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USS BRISCOE (APA-65)

H. Transformers.

No apparent damage.

I. Submarine Propelling Batteries.

Not applicable .

J. Portable Batteries.

No damage, except in the battery charging locker.
Batteries were thrown to deck and acid spilled.
Batteries in the I.C. Room had cell covers blown out.

K. Motors, Motor Generator Sets, and Motor Controllers.

No damage.

L. Lighting Equipment.

No damage, except for small amount of general lighting
lamps broken in exposed areas on main deck and above.

M. Searchlights.

24'' searchlight on lee side was broken, the arc operating
mechanism was blasted out of the barrel of the searchlight.

N. Degaussing Equipment.

No apparent damage.

O. Gyro Compass Equipment.

The gyro compass was rendered inoperative. The
compass was forced against the stand at its base,
breaking and stretching the supporting springs beyond
their designed strength.

P. Sound Powered Telephones.

No apparent damage.

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USS BRISCOE (APA-65)

Q. Ships Service Telephones.

Not applicable.

R. Announcing Systems.

This system was apparently grounded out by salt water from a tug rendering decontamination service; the water tight cover had not been properly closed. One speaker was observed to have carried away in forward engine room. The 21MC operated satisfactorily.

S. Telegraphs.

No apparent damage.

T. Indicating Systems.

No apparent damage.

U. I.C. and A.C.O. Switchboards.

No apparent damage.

V. F.C. Switchboards.

Not applicable.

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USS BRISCOE (APA-65)

PART - C

INSPECTION REPORT

SECTION IV - ELECTRONICS

A. General Description of Electronics Damage.

None Evidenced.

B. Fire Control Radar.

Not applicable.

C. Surface Search Radar.

No apparent damage.

D. Air Search Radar.

No apparent damage.

E. Radar Repeaters.

The PPI in the Pilot House was jarred loose from its foundation, no other damage was apparent.

F. Radar Counter Measures Equipment.

Not applicable.

G. Radar and Radio Beacons.

Not applicable.

H. IFF Equipment.

No apparent damage.

I. Communication Transmitters (Radio).

No apparent damage.

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USS BRISCOE (APA-85)

J. Communication Receivers (Radio).

No apparent damage.

K. Communication Antennae (Radio).

One main antenna carried away.

L. Radio Transceivers.

One SCR 608 was thrown to the deck in the Pilot House.
It remained operable.

M. Sonar Echo Ranging and Listening Equipment.

Not applicable.

N. Sonar Echo Sounding Equipment and Altimeters.

No apparent damage.

O. Loran Navigation Equipment.

Not applicable.

P. Power Supplies (Motor Generators and Filters)

No apparent damage.

Q. Television and teletype Equipment.

Not applicable.

R. Test Equipment.

No apparent damage.

S. Instrumentation.

Effects not known.

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USS BRISCOE (APA-65)

T. Telephone Equipment.

Not applicable.

U. Direction Finders (Radio)

Not applicable.

V. Spare Parts.

No apparent damage.

CONFIDENTIAL

Classification (~~Canceled~~) (Changed to _____)

By Authority of JOINT CHIEFS OF STAFF ACTION OF 13 APRIL 19

By [Signature] Date 2 August 51

AFSA R

RESTRICTED DATA

CONFIDENTIAL

[Redacted]

USS BRISCOE (APA-65)



Defense Special Weapons Agency
6801 Telegraph Road
Alexandria, Virginia 22310-3398

TRC

18 April 1997

MEMORANDUM FOR DEFENSE TECHNICAL INFORMATION CENTER
ATTENTION: OMI/Mr. William Bush (Security)

SUBJECT: Declassification of Reports

The Defense Special Weapons Agency has declassified the following reports:

✓AD-366588 4	XRD-203-Section 12✓
AD-366589 4	XRD-200-Section 9
AD-366590 4	XRD-204-Section 13
AD-366591 4	XRD-183
✓AD-366586 4	XRD-201-Section 10✓
✓AD-367487 4	XRD-131-Volume 2✓
✓AD-367516 4	XRD- 3 143✓
✓AD-367493 4	XRD-142✓
AD-801410L✓	XRD-138
AD-376831L✓	XRD-83
AD-366759 4	XRD-80
✓AD-376830L 4	XRD-79✓
✓AD-376828L 4	XRD-76✓
✓AD-367464 4	XRD-106✓
AD-801404L✓	XRD-105-Volume 1
✓AD-367459 4	XRD-100✓

TRC

18 April 1997

Subject: Declassification of Reports

✓AD-367491 ✕	XRD-134-Volume 2 ✓
✓AD-367479 ✕	XRD-123 ✓
AD-367478 ✕	XRD-122 ✓
AD-367481 ✕	XRD-125 ✓
AD-367500 ✓	XRD-159-Volume 2 <i>revised</i>
AD-367499 ✕	XRD-160-Volume 3 ✓
AD-367498 ✕	XRD-161-Volume 4 ✓
AD-367512 ✓	XRD-147
AD-367511 ✓	XRD-148
AD-367465 ✕	XRD-107 ✓
AD-366733 ✓	XRD-43
AD-367477 ✕	XRD-121 ✓
AD-367476 ✕	XRD-120 ✓
AD-367467 ✕	XRD-109-Volume 1 ✓
AD-367475 ✕	XRD-119 ✓
AD-367474 ✕	XRD-118 ✓
AD-367473 ✕	XRD-117 ✓
AD-367472 ✕	XRD-116 ✓
AD-367471 ✕	XRD-115 ✓
AD-367466 ✕	XRD-108 ✓
AD-801405L ✓	XRD-113
AD-367470 ✕	XRD-112 ✓
AD-367469 ✕	XRD-111 ✓

TRC

18 April 1997

Subject: Declassification of Reports

AD-801406L ✓ XRD-114.

In addition, all of the cited reports are now **approved for public release; distribution statement "A" now applies.**

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